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BOTANY.—*New plants mainly from western South America—III.*¹
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Ten new species of plants are described in the present paper, and four transfers of species are made. Most of the novelties are in *Valeriana*, a highly critical genus well represented in the mountains of Peru.

STENOPHYLLUS ARGENTINUS (Palla) Killip

Bulbostylis argentina Palla, Oesterr. Bot. Zeitschr. 57: 258. 1907.

Specimens examined (U. S. National Herbarium): ARGENTINA: Cordoba, Stuckert (Kneucker Cyperaceae 195, type collection). Bajo de Aufama, Dept. Tafi, Prov. Tucumán, 1800 meters, *Venturi* 3512. Cerro del Campo, Dept. Burreyero, Prov. Tucumán, 2000 meters, *Venturi* 7729.

BOEHMERIA PALLIDA (Rusby) Killip

Boehmeria diversifolia Wedd. Ann. Sci. Nat. IV. Bot. 1: 202. 1854.
Not *Boehmeria diversifolia* Miq. (1851).

Phenax pallida Rusby, Mem. Torrey Club 4: 259. 1895.

POUZOLZIA POEPPIANA (Wedd.) Killip

Margarocarpus poeppigianus Wedd. Ann. Sci. Nat. IV. Bot. 1: 204. 1854.

Margarocarpus asper Wedd. Ann. Sci. Nat. IV. Bot. 1: 204. 1854.

Boehmeria discolor Poepp.; Blume, Mus. Bot. Lugd. Bat. 2: 206. 1856.

Boehmeria aspera Blume, Mus. Bot. Lugd. Bat. 2: 206, footnote. 1856.

Pouzolzia discolor Wedd. Arch. Mus. Paris 9: 408. pl. 13, A. f. 18-24. 1856-57.

Pouzolzia aspera Wedd. in DC. Prodr. 16¹: 233. 1869. Not *Pouzolzia aspera* Wight (1853).

Recent collections from Peru show that the differences relied upon by Weddell to separate the two species treated in his final monograph as *P. discolor* and *P. aspera* are not constant, and that only a single species is represented.

¹ Published by permission of the Secretary of the Smithsonian Institution. For preceding parts, see this JOURNAL 16: 565-573. 1926, and 19: 191-195. 1929. Received June 1, 1931.

Phthirusa triplinervis Killip, sp. nov.

Parasitic shrub, glabrous throughout, the branches terete, very slender, rugulose; leaves elliptic-lanceolate, 5 to 9 cm. long, 2 to 3 cm. wide, attenuate-acuminate at apex, acute at base (petiole 8 to 10 mm. long), triplinerved, verrucose-lenticulose; inflorescence paniculate, the main rachis terete, up to 5.5 cm. long, very slender, the panicle 3- or 4-branched, the branches subangular, 2 to 3 cm. long, the flowers solitary, opposite, sessile; bracts triangular, about 1 mm. long, acute; bractlets similar but smaller; fruit ovoid, 6 to 7 mm. long, 4 to 5 mm. in diameter.

Type in the U. S. National Herbarium, No. 1,444,051, collected at Hetuchá, Río Orteguaza, Caquetá Territory, Colombia, July 24, 1926, by G. Woronow and S. Juzepczuk (no. 6231). Duplicate in the Botanical Garden of the U. S. S. R. Academy of Sciences.

As this material is in fruit only, it is difficult to indicate the species' precise relationship. The shape of the leaves is suggestive of *P. theloneura*, but in that species the leaves are 1-nerved and the flowers are in racemes. Of the known species of the genus I find none described as having triplinerved leaves.

Passiflora pilosissima Killip, sp. nov.

Herbaceous vine, "up to 10 meters in length, profusely ramified;" stem subquincangular, striate, the younger portions densely pilose; stipules narrowly linear-falcate, 3 to 4 mm. long, 1 mm. wide at base, purplish, deciduous; petioles 5 to 15 mm. long, glandless, pilose, purplish; leaves ovate, 5 to 12 cm. long, 2 to 7 cm. wide, 3-lobed at apex (middle lobe triangular, acute or subacute, cuspidate or mucronulate, much larger than the lateral lobes which often are reduced to mere cusps), rounded at base, entire, 3-nerved, obscurely ocellate beneath, membranous, densely appressed-pilose on both surfaces; peduncles in pairs; bracts narrowly linear, subverticillate or one borne just below the two others, 5 to 6 mm. long, 0.5 mm. wide, dark purple; flowers (only in bud in type specimen) "greenish white;" sepals ovate-lanceolate, obtuse, fleshy; petals ovate, obtuse, thin-membranous; corona filaments in 2 series, the outer linear-lanceolate, tapering gradually from base to apex, half as long as sepals, the inner filiform, minute; operculum closely plicate, denticulate; limen annular, prominent; ovary globose, densely hirsute.

Type in the U. S. National Museum, No. 1,343,569, collected in dense damp forests between San Gregorio and Nariño, Department of Antioquia Colombia, altitude 1700 to 2100 meters, December, 1891, by F. C. Lehmann (No. 7630).

In the list² of Lehmann's Passifloraceae this collection is referred to *P. mollis*, but the nature of the indument shows at a glance that it is quite unlike typical forms of *P. mollis*. A specimen of this has recently been received by the U. S. National Museum from the Royal Botanic Gardens, Kew, and I have thus had an opportunity of making a careful comparison with specimens of *P. mollis* from the type locality along the Quindio Trail. Although the flowers of this specimen are in bud only, the outer corona filaments are sufficiently developed to show an important difference between it and *P. mollis*; these filaments are linear-lanceolate, tapering from the base to the

² Bot. Jahrb. Engler 18: Beil. 46: 5. 1894.

apex, while in *P. mollis* they are liguliform or slightly fusiform. The leaf lobes of *P. pilosissima* are much sharper than in *P. mollis*, more nearly approximating those of *P. cuspidifolia*, of the Eastern Cordillera of Colombia.

Here probably belongs a sterile plant from La Crumbre, Department El Valle, Colombia (Killip 11342). The leaves are proportionately narrower, but are clothed with the same characteristic pubescence.

Passiflora loretensis Killip, sp. nov.

Herbaceous vine, essentially glabrous throughout; stem terete, striate stipules semi-oblong, 13 to 18 mm. long, 6 to 7 mm. wide, oblique, obtuse and mucronulate at apex, the midnerve slightly eccentric; petioles 1.5 to 2 cm. long, bearing 2 pairs of subulate glands, one pair near apex, the other near middle, the glands 1.5 mm. long; leaves lanceolate, 10 to 12 cm. long, 5.5 to 6 cm. wide, acuminate at apex, cordulate and subpeltate at base, entire, 7-nerved, reticulate-veined (nerves and veins strongly elevated beneath), coriaceous, scantily pilosulous on nerves beneath, concolorous; peduncles 1.5 to 3.5 cm. long, articulate about 5 mm. from apex; bracts cordate-ovate, 2 to 2.5 cm. long, 1 to 1.5 cm. wide, acuminate or abruptly acute, mucronulate, membranous, light green, persistent; flowers about 5 cm. wide, pink (?); calyx tube broadly campanulate, about 6 mm. long, 10 to 15 mm. wide at throat; sepals oblong, 1.8 to 2 cm. long, 6 to 8 mm. wide, obtuse, cucullate toward apex, carinate, the keel terminating in an awn 4 to 5 mm. long; petals slightly shorter than sepals; corona filaments in 5 series, filiform, the 2 outer radiate, about 1.5 cm. long, pale pink, the inner compact, 4 mm. long, deep pink; operculum membranous, 5 mm. long, fimbriate to middle, deep pink; nectar ring a low ridge; limen tubular, 4 mm. long, closely surrounding base of gynophore, crenulate; ovary broadly ovoid; fruit globose, about 5 cm. in diameter, the exocarp coriaceous; seeds narrowly cuneate, 7 to 8 mm. long, 2 to 3 mm. wide, coarsely reticulate.

Type in the U. S. National Herbarium, No. 1,470,093, collected at La Victoria, on the Amazon River, Department Loreto, Peru, in August or September, 1929, by L. Williams (No. 3086). Duplicate in Field Museum.

This is most closely related to *P. oerstedii*, and though the differences seem slight when stated in a key, these specimens of *P. loretensis* appear very unlike any material of *P. oerstedii* at hand. The leaves are much thicker and are green on both surfaces. The bracts are larger. The plant suggests also *P. amabilis*, which I know only from description and illustrations, but the shape of the petiolar glands and the coloring of the flowers are different, to mention only a few of the distinguishing characters.

Clavija magdalenae Killip, sp. nov.

Erect shrub, 2 to 3 meters high, the stem 8 to 20 mm. in diameter, castaneous, lepidote-punctate, sulcate, puberulous at end; petioles 2 to 5 cm. long, castaneous, puberulous, and subgeniculate at base, pale green and glabrous above; leaves ovate-elliptic or obovate, 15 to 30 cm. long, 8 to 12 cm. wide, acute or short-acuminate at apex, cuneate at base, decurrent on petiole, entire or remotely denticulate toward apex, conspicuously nerved and veined (midnerve stout, the principal lateral nerves 12 to 15 to a side, the venation closely reticulate), coriaceous, glabrous, drying yellowish green or pale green

above, pale green beneath; staminate inflorescence loosely racemose, 12 to 15 cm. long, the rachis glabrous, the pedicels 2 to 3 mm. long, stout, clavate, recurved; flowers 5-merous; sepals united about halfway, suborbicular, 2 mm. wide, densely ciliate, orange-red, paler at margin; corolla orange-red, about 10 mm. wide, lobed about three-quarters of distance to base, the lobes ovate-spatulate, about 5 mm. wide, rounded, entire; staminodes 5, distinct, episealous, 1 mm. long, flat; stamens united into a stout tube, barely 1 mm. long; pistillate inflorescence much reduced, the rachis (in fruit) up to 5 cm. long; corolla orange-red, about 12 mm. wide, lobed nearly to base, minutely crenulate; stamens distinct, the filaments stout, 1 mm. long, the anthers sterile; ovary conical; fruit depressed-globose, 1.5 cm. long, 2 cm. in diameter, orange-yellow.

Type in the U. S. National Herbarium, Nos. 1,433,004 (staminate) and 1,433,005 (pistillate), collected at Piojó, near Barranquilla, Department Atlántico, Colombia, altitude 400 meters, January, 1929, by Brother Elias (No. 684). The description of the fruit is based upon a specimen collected at Estrella, Lands of Loba, Department Bolívar, Colombia, by H. M. Curran (No. 323). Local names for the plant are *huevo de morocoi* and *membrillo*.

On the basis of the flat staminodes this species comes nearest *C. tarapotana* in Mez' key. However, in shape and texture of the leaves the two are quite unlike.

***Clavija reflexiflora* Killip, sp. nov.**

Shrub or small tree, 1 to 3 (extremes up to 6) meters high, the trunk simple, erect, leafy only at summit, castaneous, finely rufo-tomentose, at length glabrous; leaves elliptic-oblong, 15 to 35 cm. long, 6 to 12 cm. wide, broadest just above the middle, acute or acuminate at apex, tapering to a petiole 4 to 7 cm. long (petiole castaneous, finely rufo-tomentose and geniculate at base, glabrous, sulcate above), entire, subcoriaceous, thicker at margin, glabrous, bright green when dry, lustrous, sparingly lepidote-punctate beneath, prominently nerved and veined, the midnerve coarse, the primary lateral nerves anastomosing 3 to 5 mm. from margin, the venation closely reticulate; inflorescence racemose, 7 to 8 cm. long, the rachis glabrous, the pedicels strongly reflexed, 3 to 4 mm. long, slender, glabrous; bracts triangular, 1 to 1.2 mm. long, minutely puberulous, persistent; flowers (only staminate seen) 4- or 5-merous; sepals united about halfway, ovate-orbicular, 1 to 1.2 mm. wide, rounded, glabrous, minutely ciliate, pale at margin; corolla coalescent nearly to middle, 6 to 8 mm. wide, orange-red or orange-yellow, the lobes obovate, 2 to 3 mm. long, 1.7 to 2 mm. wide, minutely crenulate; staminodes 5, distinct, episealous, claviform, about 1 mm. in diameter, fleshy; staminal tube 1 mm. long, thick; fruit globose, 1.5 to 2 cm. in diameter, glabrous, orange-yellow or bright yellow.

Type in the U. S. National Herbarium, No. 1,462,724, collected in dense forest at San Antonio, on Río Itaya, Department Loreto, Peru, altitude about 110 meters, September 18, 1929, by E. P. Killip and A. C. Smith (No. 29345).

Additional specimens examined, all from the Department of Loreto, Peru: Mishuyacu, near Iquitos, *Klug* 219, 1320. Yurimaguas, *Killip & Smith* 27674 (in fruit). Between Yurimaguas and Balsapuerto, *Killip & Smith* 28112. Along Río Marañón between mouths of Río Pastaza and Río Hualaga, *Killip & Smith* 29191, 29203. Puerto Arturo, *Killip & Smith* 27916.

Clavija reflexiflora comes nearest *C. lancifolia* in the key in Mez' Monograph of Theophrastaceae, though the plant appears to be most closely related to *C. parviflora*. *Clavija lancifolia* has proportionately narrower leaves and smaller staminate flowers; *C. parviflora* has shorter petioles, erect pedicels, smaller flowers, and the staminodes are globose rather than claviform. The proposed species resembles also *C. poeppigii*, of which Mr. Smith and I collected several specimens in this general region, but the under surface of the leaves and the inflorescence of that plant are pilose, and the leaves are, on the average, much larger.

***Funastrum ovalifolium* (Rusby) Killip**

Philibertella ovalifolia Rusby, Descr. S. Amer. Pl. 94. 1920.

Specimens examined: COLOMBIA: MAGDALENA: Mamateca, *H. H. Smith* 1683 (U. S. Nat. Herb., type coll.). About 9 kilometers south of Santa Marta, *Killip & Smith* 21105 (U. S. Nat. Herb.).

***Valeriana oligodonta* Killip, sp. nov.**

Erect herb, about 30 cm. high, from a thickened root, essentially glabrous; basal leaves long-petioled (petioles 7 to 8 cm. long), simple, unlobed, ovate, 4.5 to 7 cm. long, 3 to 4 cm. wide, rounded at apex, abruptly narrowed, or tapering gradually to petiole, entire or undulate in upper half, irregularly crenate-dentate in lower, minutely ciliate, obscurely flabellate-nerved, thin-membranous when dry; cauline leaves one pair, lanceolate, 2.5 to 4 cm. long, 1 to 1.5 cm. wide, tapering to an obtuse apex, subsessile, irregularly serrate or shallowly lobed toward base; flowers borne in dense globose heads about 1 cm. wide, their peduncles stout, those at the lower node about 2 cm. long, those at the upper node up to 1 cm. long or the heads subsessile; bracts linear, subentire, minutely ciliate; bractlets linear-spatulate, 2 to 2.5 mm. long, rounded at apex; corolla tube funnel-shaped, 1.5 to 2 mm. long, the limb 4- or 5-lobed, 3 to 4 mm. wide.

Type in the herbarium of the Field Museum of Natural History, No. 580434, collected on the hills of the Saxaihuamán, Department Cuzco, Peru, altitude 3,500 to 3,600 meters, November 20, 1928, by F. L. Herrera (No. 2190).

This differs from *V. herrerae*, to which it seems to be most closely allied, in having a more compact inflorescence, the corolla being fully three times larger, with a deeper lobation. The leaves are much larger, and differently shaped.

***Valeriana maxima* Killip, sp. nov.**

Coarse herb, 1.5 to 2.5 meters high, glabrous throughout except for a slight indument on the bracts; stem terete, up to 1 cm. thick, striate; basal leaves unlobed, ovate-elliptic, 8 to 10 cm. long, 3 to 4 cm. wide, acuminate, their petioles 7 to 10 cm. long; cauline leaves pinnatifid nearly to rachis (hence the rachis narrowly winged), up to 10 cm. long, sessile or the lower with stout petioles about 3 cm. long and connate at base, the lateral segments 1 to 3 pairs, oblong or ovate-oblong, 1 to 3.5 cm. long, 0.8 to 2 cm. wide, obtuse or subacute, entire or undulate, the terminal segment ovate, 7 to 10 cm. long, 3 to 3.5 cm. wide, acuminate; panicle diffuse, up to 75 cm. long, 25 cm. wide, the primary and secondary branches opposite, ultimately dichotomous; bracts triangular, 2 to 3 mm. long, pilosulous; bractlets linear, 1 to 1.5 mm. long;

corolla funnel-shaped, 1.5 to 2 mm. long, pure white; achenes lance-oblong, 2 mm. long, 3-nerved on one face, 1-nerved on other, pappose, the pappus tawny.

Type in the U. S. National Herbarium, Nos. 1,358,589-591, collected at Huacapistana, Department Junín, Peru, altitude 1,800 meters, June 5, 1929, by E. P. Killip and A. C. Smith (No. 24105).

This belongs to the group of *Valeriana* represented in Peru by *V. macbridei*, *V. bambusicaulis*, and *V. warburgii*. From these it differs in the cauline leaves being merely deeply pinnatifid, with a winged rachis, rather than pinnately compound. It resembles somewhat *V. dipsacoides*, also collected by Mr. Smith and myself (no. 24171) at Huacapistana, the type locality of the species, but in that plant the cauline leaves are unlobed.

***Valeriana asplenifolia* Killip, sp. nov.**

Cespitose herb, glabrous except at the nodes of the inflorescence, the root-stock elongate, thick, branched toward apex; leaves mainly basal, forming a rosette, linear-lanceolate in general outline, 5 to 15 cm. long (including a petiole about half their length), 0.5 to 1.5 cm. wide, pinnate, or pinnatifid toward apex, the leaflets 10 to 15 pairs, opposite or subopposite, ovate or lance-ovate, the lowermost up to 9 mm. long, 5 mm. wide, regularly crenate-serrate with 4 or 5 teeth to a side, obtuse, sessile and subdecurent on rachis, the lower remote, the upper approximate and even imbricate; cauline leaves a single pair at base of inflorescence, much reduced, 5 to 7 mm. long, up to 2 mm. wide, pinnatifid at least toward base, sessile; stem up to 25 cm. high, the inflorescence racemose-paniculate, the flowers densely massed at the ends of short branchlets in subglobose heads up to 1 cm. wide; bractlets linear-oblong, 2.5 to 3 mm. long, 1 to 1.5 mm. wide, obtuse, dark green at center, pale at margin; corolla funnel-shaped, the tube 2.5 mm. long, 1.5 mm. wide at throat, white, the lobes linear, 1 mm. long, obtuse, greenish white; achenes narrowly lance-oblong, about 1 mm. long, dark brown, inconspicuously nerved, pappose, the pappus 10-rayed, brownish white.

Type in the U. S. National Herbarium, No. 1,357,123, collected in shade of rocks of puna on Mount La Juntay, near Huancayo, Department Junín, Peru, altitude 4,700 meters, April 27, 1929, by E. P. Killip and A. C. Smith (No. 22051).

From *V. thalictroides*, which it resembles in general appearance, this species is distinguished by the more prominent and more regular toothing of the leaves, much reduced cauline leaves, shorter bractlets, and narrower corolla lobes. The foliage greatly resembles the fronds of ferns in the group of *Asplenium lunulatum*.

***Valeriana rufescens* Killip, sp. nov.**

Cespitose herb, rufo-tomentellous nearly throughout, drying black; root-stock woody, 5 to 7 mm. thick, branched toward apex; leaves mainly basal, forming a rosette, narrowly lanceolate in general outline, 8 to 10 cm. long (including petiole 2 to 4 cm. long), 1.5 to 2 cm. wide, pinnate in lower half (leaflets oblong or oblong-spatulate, up to 1 cm. long, 0.5 cm. wide, obtuse, irregularly serrate with 2 or 3 serrations to a side, sessile), pinnatifid in

upper half, the upper surface of the leaves densely rufo-tomentellous, the lower surface rufo-tomentellous on veins, otherwise glabrous; cauline leaves two pairs, pinnatifid, similar in texture and indument to the basal leaves, the lower pair short-petioled, the upper pair sessile; stem up to 20 cm. high; inflorescence racemose-paniculate, 7 to 8 cm. long, 2 to 2.5 cm. wide, the flowers borne in subglobose heads on short (up to 8 mm.) branches; bracts broadly spatulate, 3 to 4 mm. long, 2 to 2.5 mm. wide, truncate, obsoletely crenulate; achenes oblong, trigonous, about 1.5 mm. long, pappose, the pappus 8-rayed.

Type in the U. S. National Herbarium, No. 1,470,033, collected at Munna, Huallaga (Valley?), Peru, altitude 3,800 to 3,900 meters, by A. Weberbauer (No. 6786).

Like the preceding, this is related to *V. thalictroides*; from both of these it differs in being clothed nearly throughout with a dense reddish-brown indument. The leaves are not wholly pinnate, as in *V. thalictroides*, nor are the divisions regularly crenate-serrulate, as in *V. asplenifolia*.

Valeriana agrimonifolia Killip, sp. nov.

Slender herb, up to 65 cm. high, glabrous throughout, except fruit; stem reddish brown, terete; leaves all pinnate, the basal and lower ones 6 to 9 cm. long (including petiole about 1.5 cm.), the uppermost about 2.5 cm. long, the leaflets coarsely and regularly crenate-serrate, membranous, the lateral ovate, 7 to 15 mm. long, 5 to 7 mm. wide, sessile or subsessile, the terminal leaflet ovate or obovate, slightly larger, short-petiolulate; inflorescence racemose-paniculate, 40 to 45 cm. long, about 12 cm. wide (unusually regular for the genus), the primary and secondary branches opposite, the latter two or three times dichotomous, the flowers congested at the ends of the ultimate branches; bracts narrowly linear, about 4 mm. long; bractlets linear-spatulate, about 3 mm. long, green, purplish at tips; corolla tube narrowly funnel-shaped, 0.5 mm. long, cream-white, the lobes orbicular; achenes ovate, 1 to 1.5 mm. long, subfalcate, 3-nerved on one side, 1-nerved on other, pilosulous, pappose, the pappus 8-rayed, light green, purplish at base.

Type in the U. S. National Herbarium, No. 1,357,035, collected at Tarma, Department Junín, Peru, altitude 3,100 meters, April 22, 1929, by E. P. Killip and A. C. Smith (No. 21933).

This probably is nearest *V. warburgii*, but it differs in the size and toothings of the leaflets and the congested grouping of the flowers at the ends of the branches of the inflorescence.